

# OPERATING MANUAL METO-FER<sup>®</sup> AUTOMATION AG

COMPACT GRIPPER TYPE

KZP 12

KZP 20

KZP 25

KZP 32

KZP 50

SERIES FROM 2-16

## 1. PRODUCT DESCRIPTION

### 1.1 Introduction

#### 1.1.1. Utilization

The compact grippers KZP (KZP...D) are able to execute grip movements in any position. The fingers (Pos.9, KZP 12 Pos.4) make a movement, and can be stepless adjusted, move parallel, radial gripping to each other.

#### 1.1.2. Safety Precautions

Before starting to operate the compact gripper KZP (KZP...D), it is necessary to check that no body parts are within the working range of the element.

The maximum supply pressure of 8 bar must not be surpassed.

#### 1.1.3. Danger Area

Any body parts are to be kept out of the working area (stroke area) of the unit in order to avoid mangling.

### 1.2 Technical Data

#### 1.2.1 Weights and Measurements

See also Sheet 5

Type	A	B	C	D	E	F	G min.	G max.	H min.	H max.	J min.	J max.	L
KZP 12	28	31.5	20.5	20	4	6	22.5	31	33.5	42	41.5	50	3.5
KZP 20	35	39	31	24	5.5	7	33	45	45	57	57	69	5
KZP 25	40	44	31	30	5	7	38	51.5	50	63.5	62	75.5	5
KZP 32	60	72	49	40	10	8	47	68	75	96	95	110	10
KZP 50	70	72	47	50	10	8	50	74	82	106	102	126	10

M	N	O	P	Q	R	S	T
13.5	M4	M4/8	4	1.1	8	41	19.5
15	M5	M4/12	5	2.3	10	55	24
15	M5	M5/15	5	2.7	10	60	28
25	M6	M6/15	7.5	2.7	15	95	44
30	M6	M8/17	7.5	3	15	105	42

## OPERATING MANUAL (KZP)

Type	Dimension for Air Connection				Weight Lb.(kg)
	U	V	W	X	
KZP 12	18.25	9.75	14.5	6	0.4 (0.18)
KZP 20	23.50	11.5	17.5	6	0.7 (0.30)
KZP 25	26	14	19.5	5	1.0 (0.45)
KZP 32	30	30	34	8	3.7 (1.70)
KZP 50	35	35	33	8	5.1 (2.30)

### 1.2.2. Performance Characteristics

Type	Clamping force at 72.5PSI (5 Bar)	Air consumption for each double stroke at 72.5 PSI (5 Bar)
KZP 12	4 lb. ( 19 N)	.0002 scf (0.004 NL)
KZP 20	7 lb. ( 30 N)	.0005 scf (0.014 NL)
KZP 25	11 lb. ( 48 N)	.0010 scf (0.027 NL)
KZP 32	19 lb. ( 85 N)	.0025 scf (0.072 NL)
KZP 50	49 lb. (220 N)	.0079 scf (0.224 NL)

NL: Normal Liter

### 1.2.3 Operating Source

40mm filtered, unoiled or oiled air (dew point 6°C)

Operating pressure  $P_{min}$  3 bar  
 $P_{max}$  8 bar

### 1.2.4 Connections

Air connections M5 (see sheet 6)

### 1.2.5 Environment

Temperature 50°F to 122°F (+ 10°C to + 50°C)  
 Relative humidity 95% (without condensation of water)  
 Purity of the environment air regular working place atmosphere

## OPERATING MANUAL (KZP)

### 1.3 Features

#### 1.3.1 Standard Features

The compact gripper KZP (KZP...D) includes a sensor bracket for checking the open and closed positions. It is possible to add this sensor bracket later on by ordering KZP...Q. The inductive proximity sensors are not included.

#### 1.3.2 Special Equipment

The compact grippers KZP (KZP...D) can be equipped with proximity switches (see Meto-Fer® Electronic Catalog Page 15) so you will be able to check open and closed positions.

Gripper	Inductive Proximity Switches
KZP 12 D	IM-004-...-...
KZP 20 D	IM-004-...-...
KZP 25 D	IM-004-...-...
KZP 32 D	IM-006-...-...
KZP 50 D	IM-006-...-...

## 2. SAFETY REGULATIONS

### 2.1 In general

See chapters 1.1.1  
1.1.2  
1.1.3

### 2.2 Specifically

Do not make any changes or modifications to the unit (voids warranty).

## 3. CONSTRUCTION AND FUNCTION

To check the open and closed positions, the compact gripper can be equipped with inductive proximity switches. The stroke (clamp) can be adjusted by turning of

the set screw (see list).

## **OPERATING MANUAL (KZP)**

<b>Compact Gripper Type</b>	<b>Position No. of Set Screw</b>
KZP 12	207
KZP 20, 25	208
KZP 32, 50	209

### **4. INITIAL OPERATION**

#### **4.1 Compressed Air**

Remove the safety caps from the air connections. In order to regulate the velocity of the movement, we recommend our flow controls DV-M5 (see sheet 5.021).

### **5. MAINTENANCE**

#### **5.1 Introduction**

The compact gripper unit does not require any special maintenance procedure  
Never use any type of solvents in order to clean the unit.

#### **5.2 Air Supply**

The mini linear unit is equipped with **oil-free seals** and can be operated with dry and non-oiled compressed air. If oiled compressed air is used, we recommend:

- Airpress compound SAE 5 (Klueber Order No. 063027)

### **6. REPAIR**

#### **6.1 Introduction**

If the unit no longer meets the requirements (leakage, wear, etc.) the defective parts must be replaced.

#### **6.2 Safety Precautions**

Before dismantling the unit, it is necessary to check that the compressed air supply is turned off. It is best to disconnect the compressed air supply from the unit.

When repair work is done, only the original spare parts and lubrication must be used.

## OPERATING MANUAL (KZP)

### 6.3 Replacing the Seals

- Remove the housing by loosening the screws.
- Press out the pins and extract the piston.
- Loosen the piston from the pusher.
- Replace the O-ring and piston seal.
- Grease the cylinder bore and piston rod. (See Chapter 7.2.)
- The parts are then assembled in reverse order as above described.

Type	Housing	Cylinder Screw	Piston	Set Screw
KZP 12	Pos.6	Pos.205	Pos.7	Pos.11
KZP 20	Pos.1	Pos.206	Pos.2	Pos.10
KZP 25	Pos.1	Pos.206	Pos.2	Pos.10
KZP 32	Pos.1	Pos.207	Pos.2	Pos.13
KZP 50	Pos.1	Pos.207	Pos.2	Pos.13

## 7. SPARE PARTS LIST

### 7.1 Spare Parts

When ordering spare parts, the type and serial number of the unit must be supplied.

Seal Kit Order Number 460.100.0302				
Type	Position	Order Number	Description	Quantity
	201	025.100.0320	O-Ring	1 Piece
KZP 12	202	025.150.0500	Piston Seal	1 Piece
	203	025.150.0160	O-Ring	1 Piece

Seal Kit Order Number 460.100.0304				
Type	Position	Order Number	Description	Quantity

	201	025.100.0520	O-Ring	1 Piece
KZP 20	202	025.150.0550	Piston Seal	1 Piece
	203	025.100.0230	O-Ring	1 Piece



## OPERATING MANUAL (KZP)

<b>Seal Kit Order Number 460.100.0306</b>				
<b>Type</b>	<b>Position</b>	<b>Order Number</b>	<b>Description</b>	<b>Quantity</b>
	201	025.100.0580	O-Ring	1 Piece
KZP 25	202	025.150.0600	Piston Seal	1 Piece
	203	025.100.0270	O-Ring	1 Piece

<b>Seal Kit Order Number 460.100.0308</b>				
<b>Type</b>	<b>Position</b>	<b>Order Number</b>	<b>Description</b>	<b>Quantity</b>
	201	025.100.0660	O-Ring	1 Piece
KZP 32	202	025.150.0650	Piston Seal	1 Piece
	203	025.100.0310	O-Ring	1 Piece

<b>Seal Kit Order Number 460.100.0309</b>				
<b>Type</b>	<b>Position</b>	<b>Order Number</b>	<b>Description</b>	<b>Quantity</b>
	201	025.100.0795	O-Ring	1 Piece
KZP 50	202	025.150.0700	Piston Seal	1 Piece
	204	025.100.0420	O-Ring	1 Piece

### 7.2 Lubrication

Grease for seals

Staburag NBU 4 Atemp. 040  
(Klueber Order No. 005)